# Water Quality Impacts of the CA Water Fix

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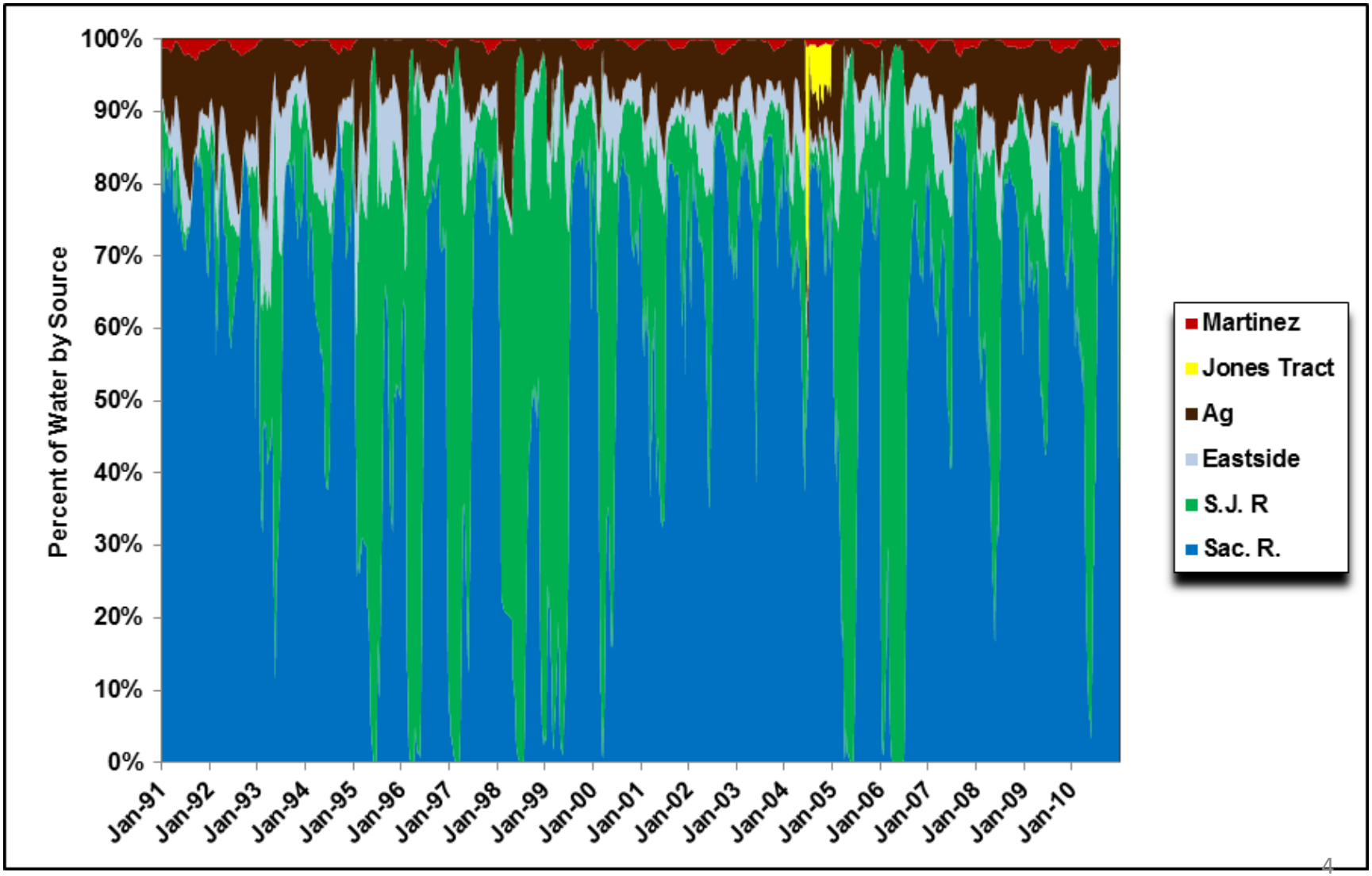
# CA Water Fix – Alternative 4A

- Three intakes on Sacramento River
- 9,000 cfs capacity
- Extremely complicated operations
  - Preference for South Delta pumping Jul – Sep
  - Greatest diversions from Sacramento River in wetter years
  - Lowest diversions from Sacramento River in drier years

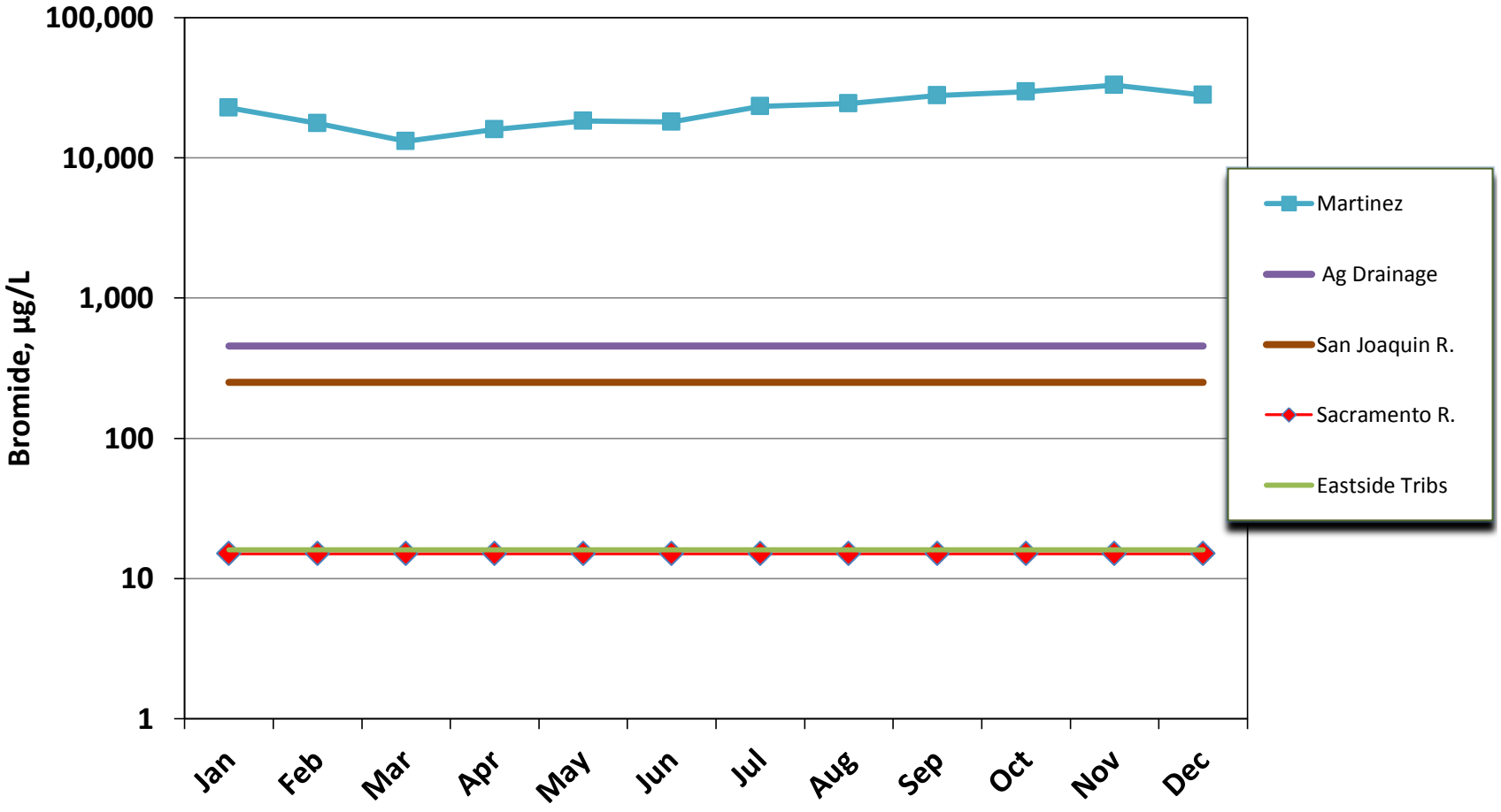
# Water Quality Impacts Based on Modeling

- CalSim – Monthly average river flows and reservoir storage
- DSM2 – QUAL
  - EC and DOC concentrations at Delta locations
  - Flow fractions at Delta locations (fingerprint)
    - Sac R., SJR, Eastside tribs, Delta ag drainage, seawater
- Flow fractions fingerprint + historical water quality data = concentrations of water quality constituents at Delta locations

# Flow Fractions Fingerprint at Clifton Court



# Bromide Concentrations in Source Waters



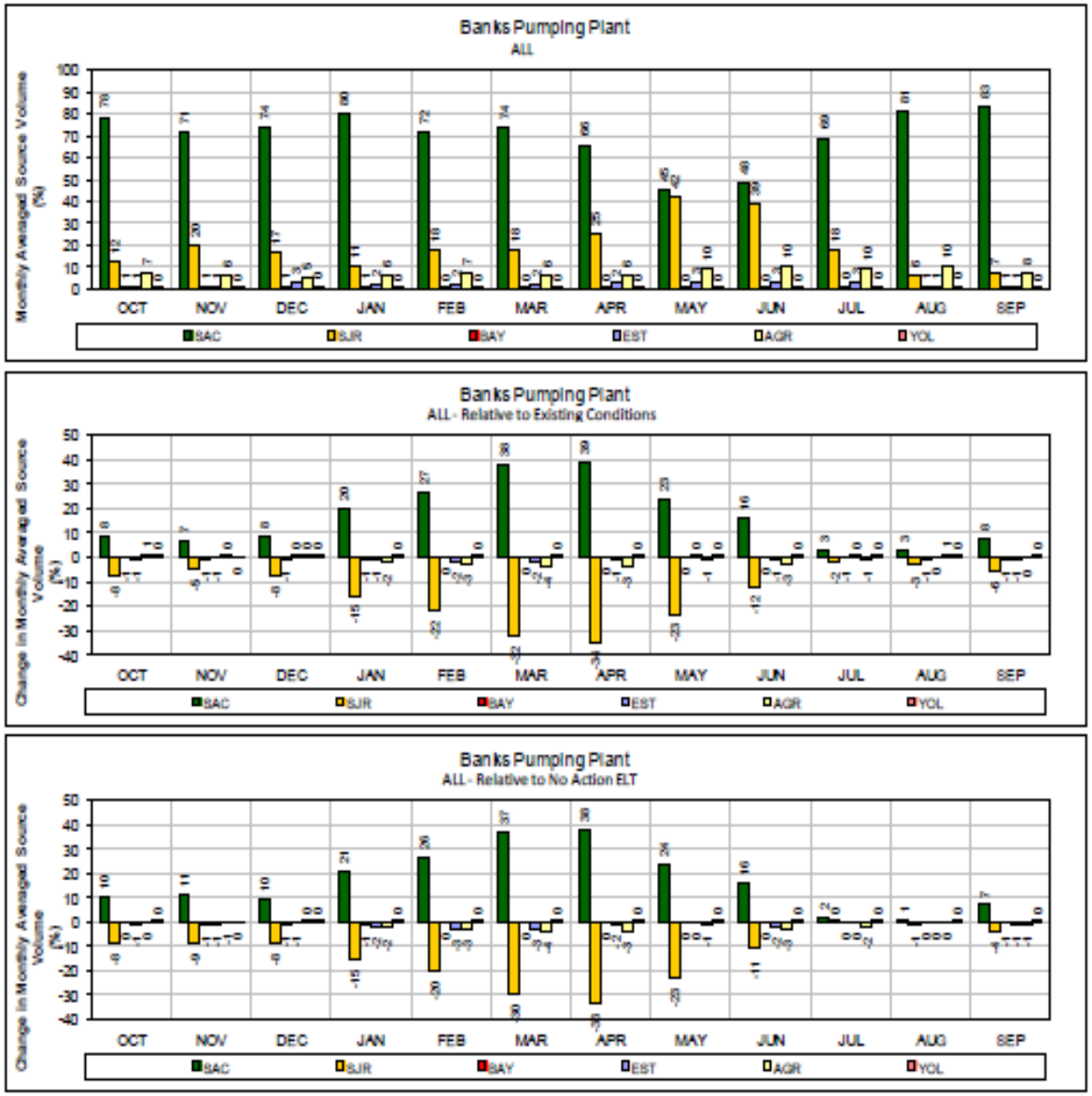
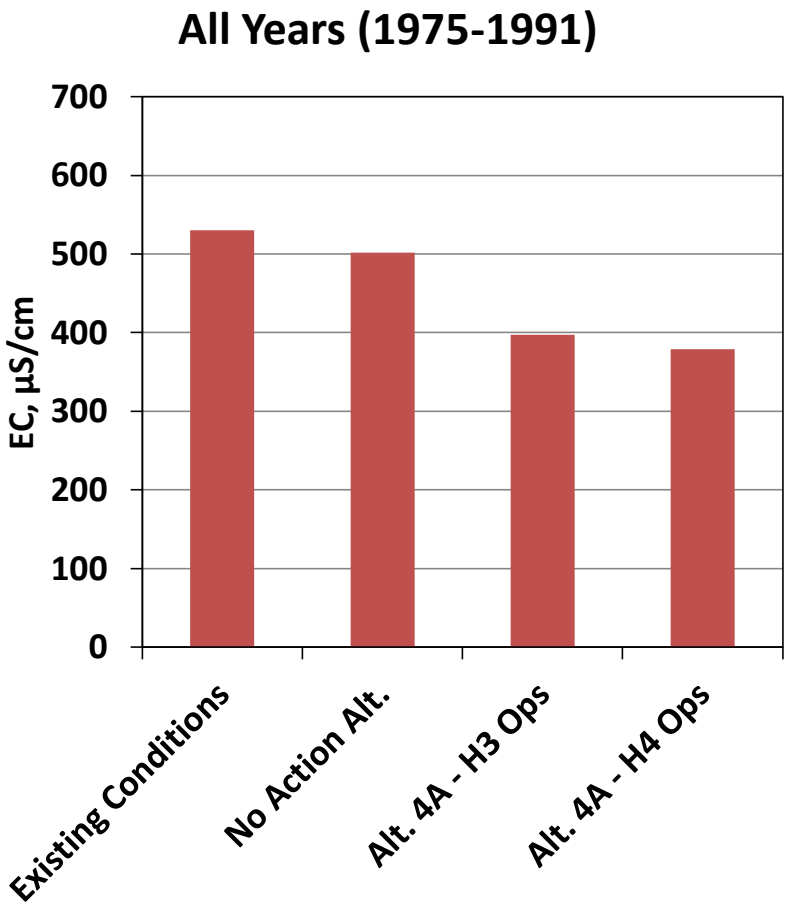
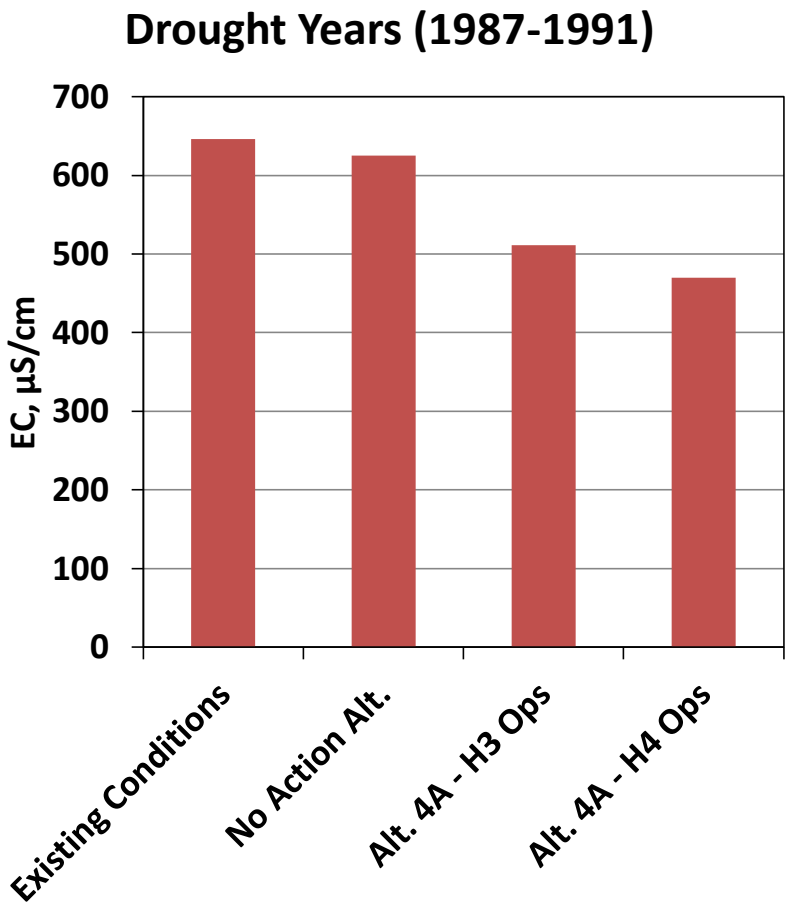


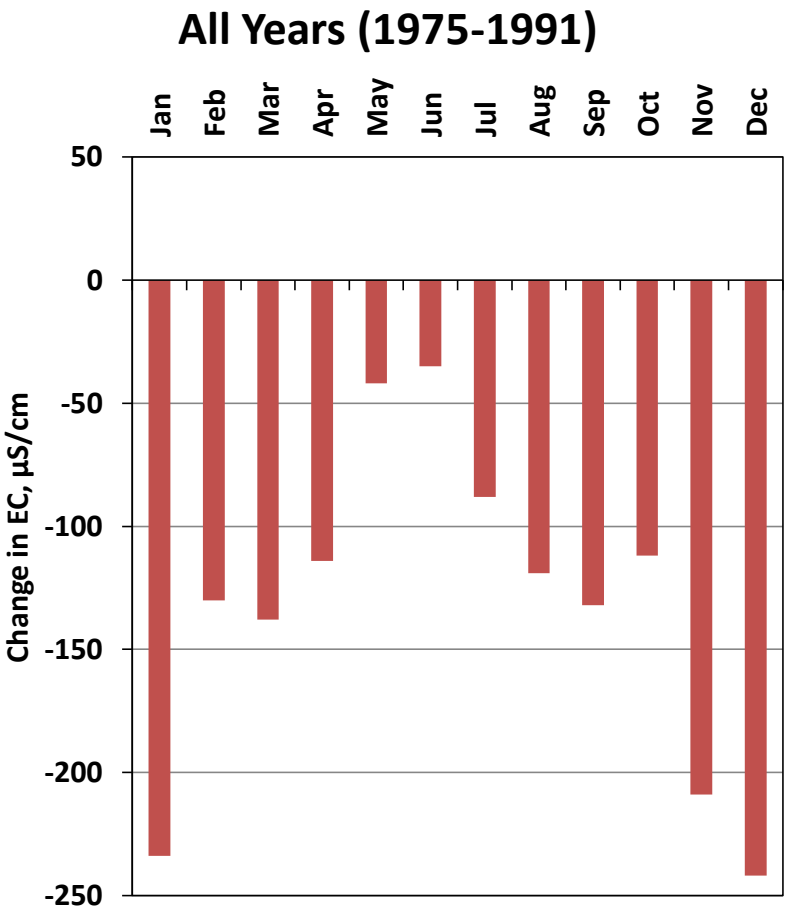

Figure B.4-41. ALT 4A Scenario H3 – Banks Pumping Plant for ALL Years (1976–1991)

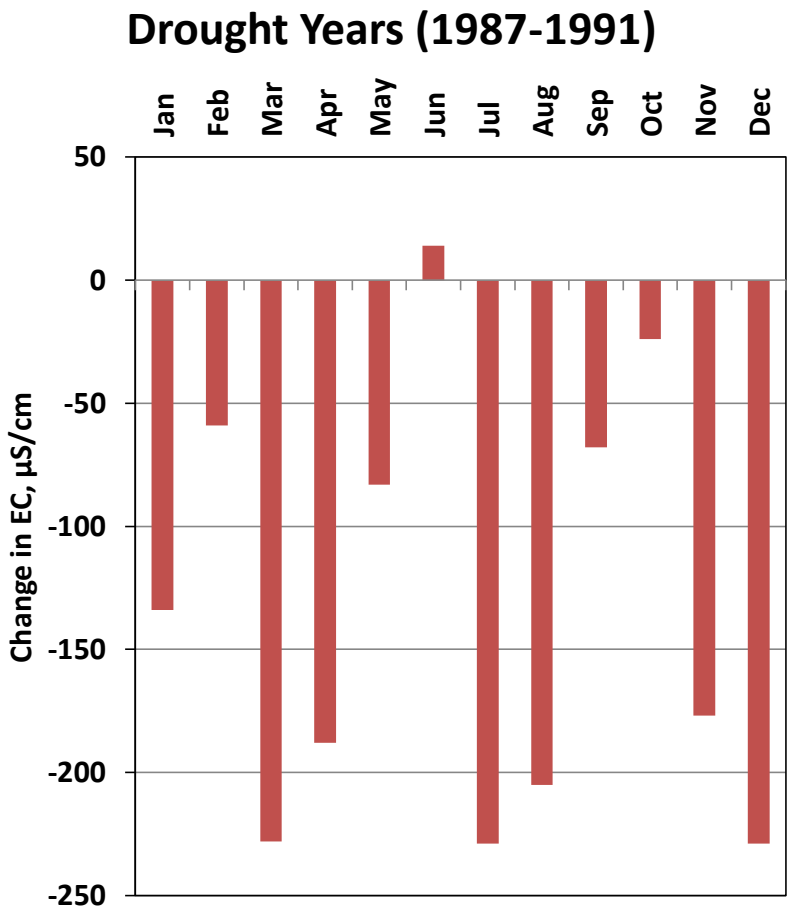
# Average EC at Banks Pumping Plant



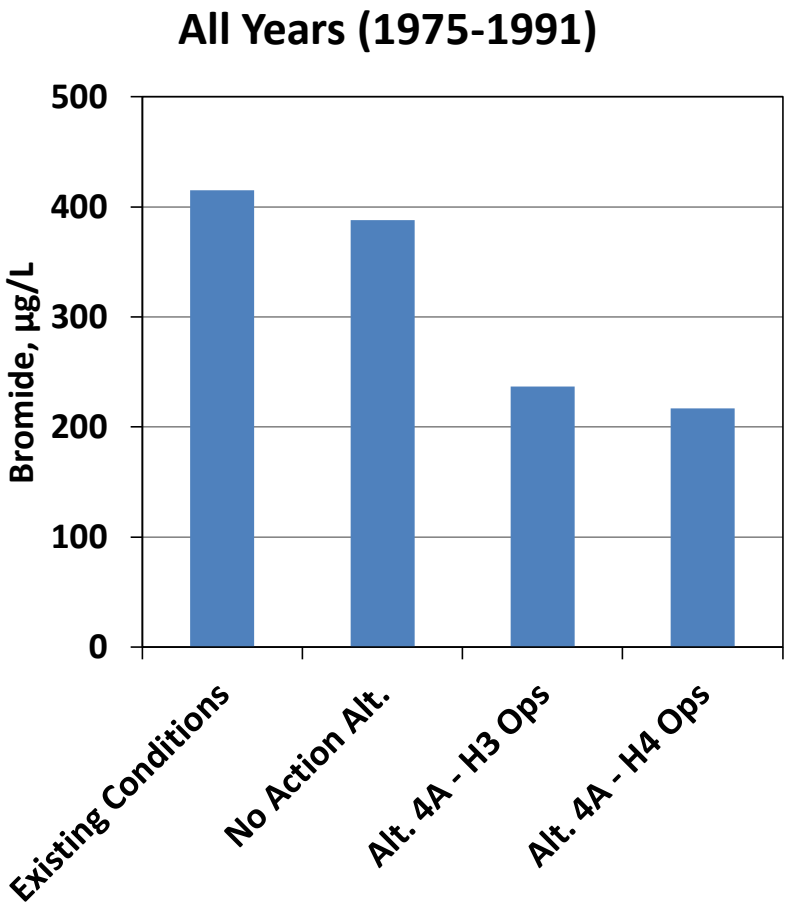



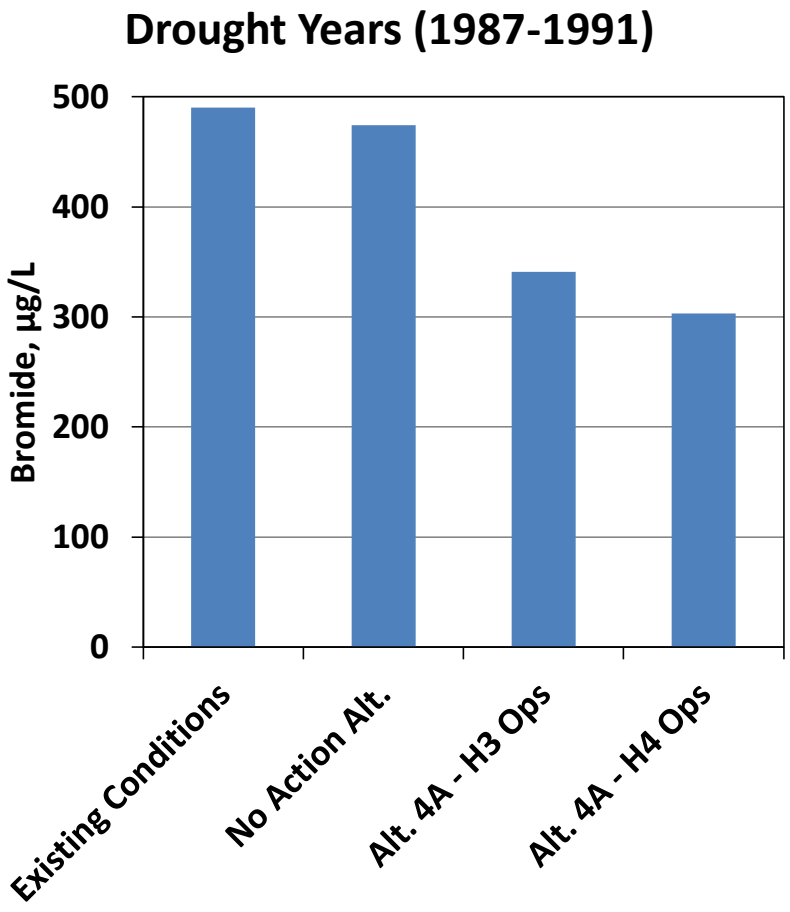
# Change in EC at Banks Pumping Plant



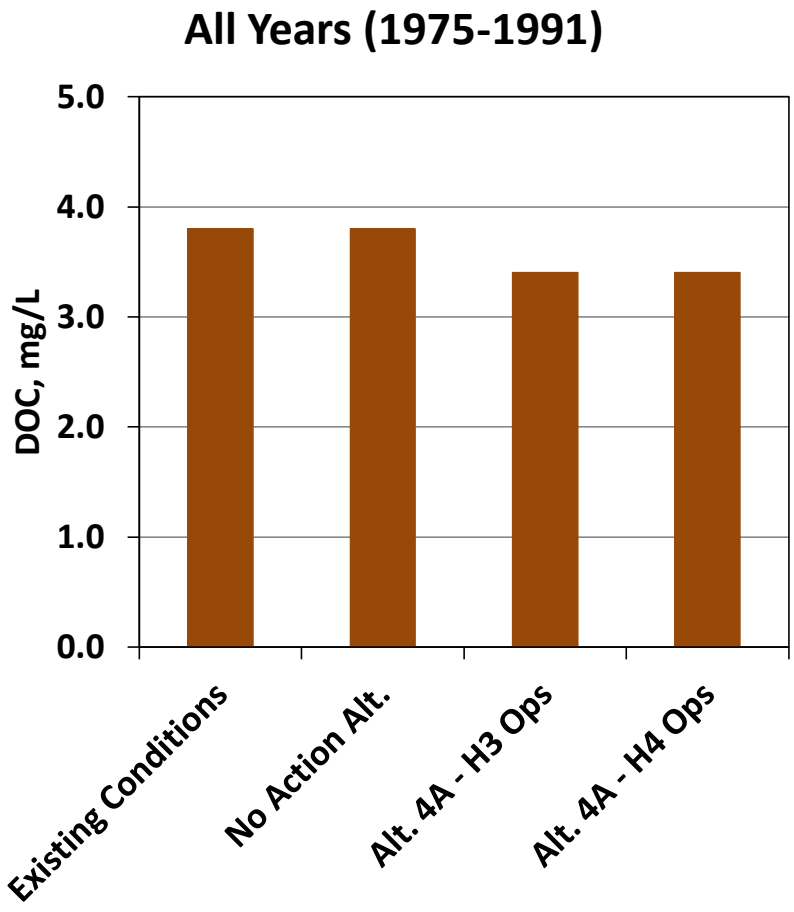



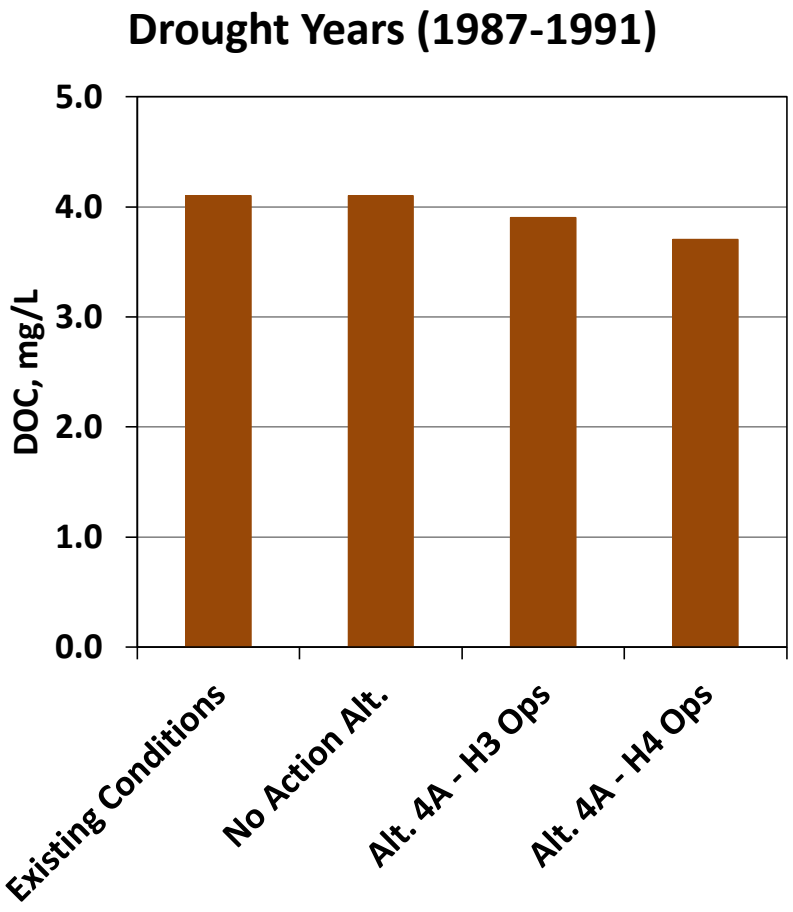
# Average Bromide Concentration at Banks Pumping Plant



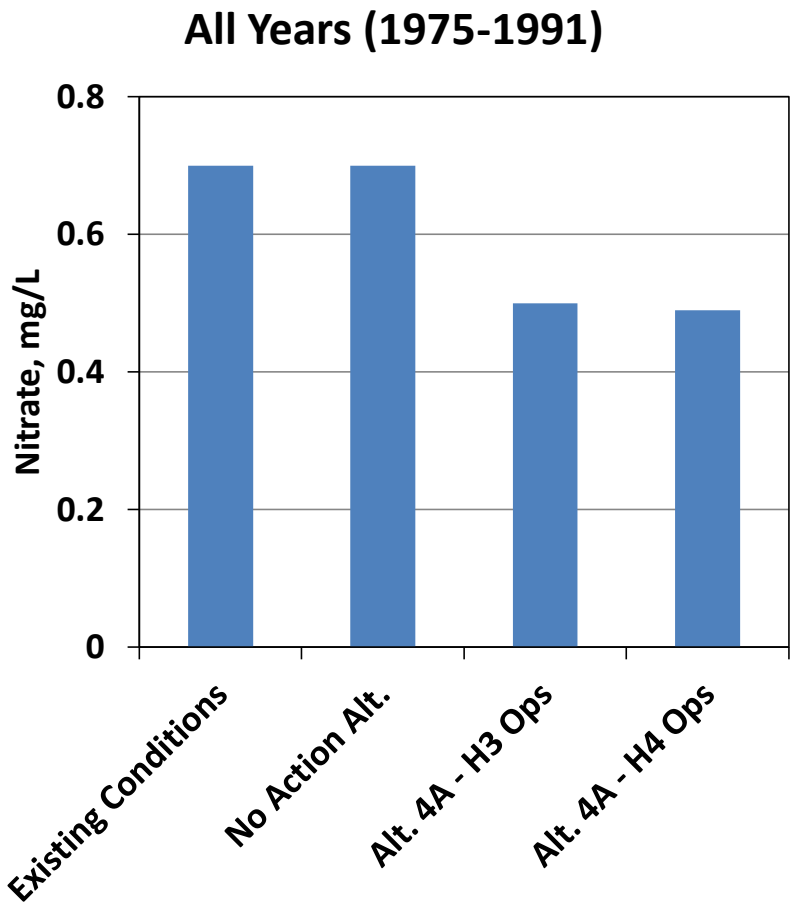



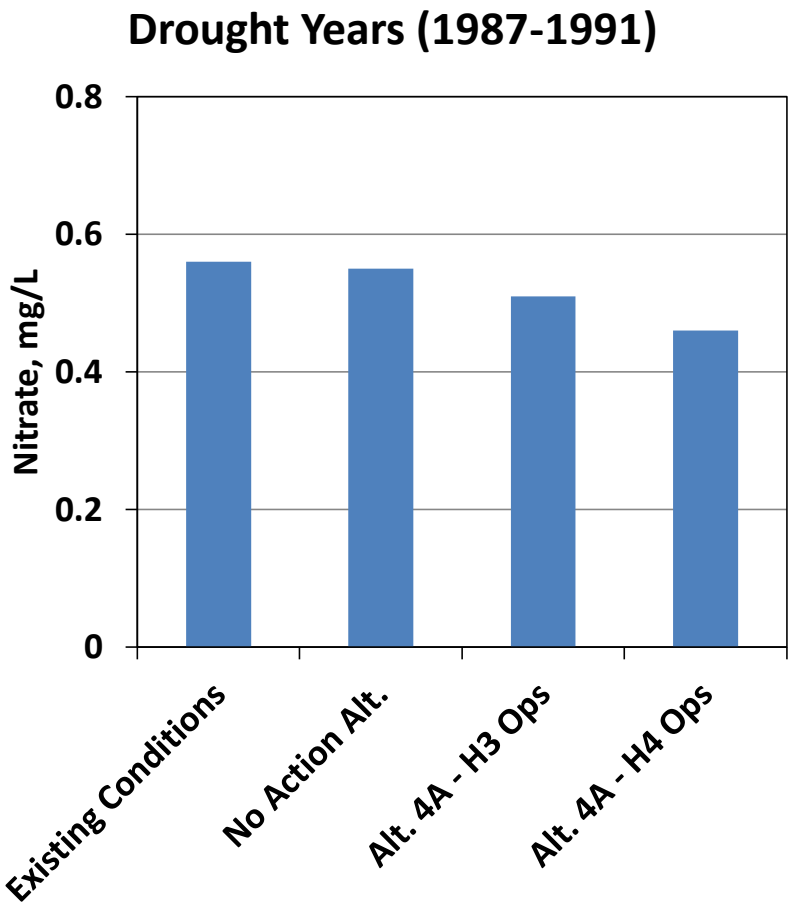
# Average DOC Concentration at Banks Pumping Plant



# Average Nitrate Concentration at Banks Pumping Plant



# *Microcystis*

- Assessed qualitatively
- Changes relative to Existing Conditions
  - Increased residence times in Delta
  - Warmer water temperatures
  - Due primarily to habitat restoration and climate change
- Substantial uncertainty over impacts of Alternative 4A

# Conclusion

- Average Banks water quality will improve relative to Existing Conditions

| Constituent | All Years, % Decrease | Drought Years, % Decrease |
|---|---|---|
| EC | 30 | 20 |
| Bromide | 40 | 30 |
| DOC | 10 | 5 |
| Nitrate | 30 | 10 |